**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

SSL SERVICES, LLC,

          Plaintiff,

    v.

CISCO SYSTEMS, INC.,

          Defendant.

Case No. 2:15-cv-433-JRG-RSP

MEMORANDUM OPINION AND ORDER

Pending before the Court is the opening claim construction brief of SSL Services, LLC ("Plaintiff") (Dkt. No. 71, filed on January 6, 2016),[1] the response of Cisco Systems, Inc. ("Defendant") (Dkt. No. 75, filed on January 20, 2016), and the reply of Plaintiff (Dkt. No. 76, filed on January 27, 2016). The Court held a claim construction hearing on February 25, 2016. Having considered the arguments and the intrinsic and extrinsic evidence the Court issues this Order construing the disputed terms. *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015).

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[1] Citations to the parties' filings are to the filing's number in the docket (Dkt. No.) and pin cites are to the page numbers assigned through ECF.

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I. BACKGROUND

Plaintiff alleges that Defendant infringes U.S. Patent No. 6,158,011 (the "'011 Patent). The '011 Patent is entitled "Multi-Access Virtual Private Network." The application that led to the '011 Patent is a continuation of an application filed on August 26, 1997. The '011 Patent issued on December 5, 2000. The parent application, filed on August 26, 1997, issued as U.S. Patent No. 6,061,796 (the "'796 Patent") on May 9, 2000. In an ex parte reexamination of the '011 Patent, all reexamined claims were confirmed without amendment and the certificate issued on December 12, 2012.

The Court previously construed the '011 Patent and the '796 Patent, in *SSL Services, LLC v. Citrix Systems, Inc.*, No. 2:08-cv-158-JRG. There, the Court construed several terms that are also presented for construction in this case. *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364 (E.D. Tex. 2011) ("*Citrix*"). The Federal Circuit considered an appeal from the *Citrix* case that included issues related to the infringement and validity of the '011 Patent. *SSL Servs., LLC v. Citrix Sys.*, 769 F.3d 1073, 1078, 1088–93 (Fed. Cir. 2014) ("*Citrix Appeal*"). The Federal Circuit affirmed that the '011 Patent was willfully infringed and was not invalid and affirmed the Court's claim constructions.

In general, the '011 Patent is directed to implementing a virtual private network by inserting software between the levels (or layers) of a computer-communication software hierarchy. These levels include an applications level and various communications levels below the applications level in the hierarchy. These lower communications levels facilitate computer communications. More specifically, they facilitate application-to-application communications without requiring the applications to have the functionality for handling every stage of the communication. For example, an application program may share information by providing it to a

transport driver level where the information is formatted for communication by being packaged into packets or datagrams. The transport driver level may share the formatted information with a network driver level where the information is driven over the communication channel (e.g., telephone line or Ethernet). '011 Patent col.2 l.49 –col.3 l.57; *see Citrix*, 816 F. Supp. at 366–68; *Citrix Appeal*, 769 F.3d at 1078–80. The invention of the '011 Patent is directed to inserting security functionality as "shims" between the software levels and using the shims to reroute certain information flowing between the levels to software for encryption and authentication. *Id*. at col.6 ll.37–50.

The '011 Patent describes the operation of various shims with reference to Figures 3, 4, and 5. Figure 5, reproduced here and annotated by the Court, shows the location of three shims with respect to existing levels. A socket shim (50, in blue) is placed between a sockets level (22) and the applications level, where applications (27, 36, 37) and encryption software (the "Authentication Client Software," 20) are located. *Id*. at col.9 l.46 – col.10 l.26. A TDI shim (53, in yellow) is placed between the sockets level (50) and the TDI (transport driver) level (21) and also between the applications level and the TDI

FIG. 5
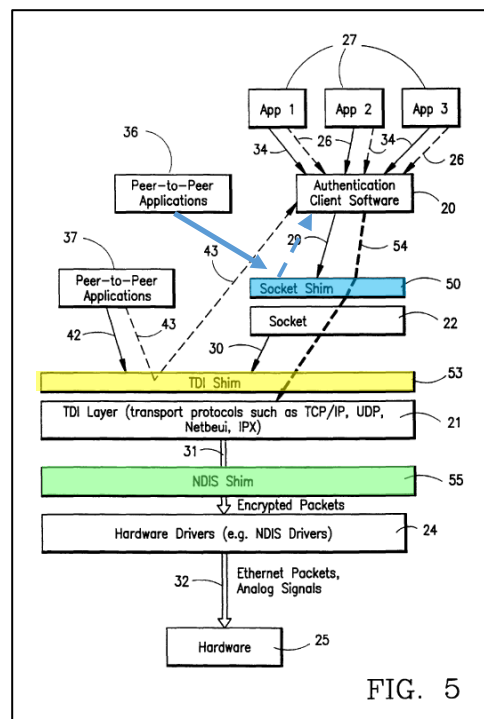
level for applications that do not use the sockets level. *Id*. at col.10 ll.27–41. An NDIS shim (55, in green) is placed between the TDI level and NDIS (network driver) level (24). *Id*. at col.10 l.42 – col.11 l.2. For certain information flowing from the applications to the sockets or TDI level, the socket shim or TDI shim reroutes the information to the applications level encryption

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software, where the information is encrypted for communication via an authentication server (not

shown). *Id.* at col.9 l.46 – col.10 l.41. The NDIS shim does not reroute the information to the

applications level encryption software, but rather performs encryption itself. *Id.* at col.10 l.42 –

col.11 l.2.

> Notably, the '011 Patent provides that

> the invention maintains the applications level infrastructure of prior client server
> private networking arrangements, while adding shims to lower levels in order to
> accommodate a variety of peer-to-peer communications applications while
> utilizing the applications level infrastructure for authentication and session key
> generation purposes.

Id. at col.2 ll.14–20. That is, in the invention, the shims are inserted below the applications level

where the applications level encryption takes place. *Id.*; *see also id.* at col.4 ll.22–26, ll.59–64

(describing implementing the invention with a prior-art encryption software that "operates at the

highest level, or applications level").

> The abstract of the '011 Patent provides:

> A virtual private network for communicating between a server and clients over an
> open network uses an applications level encryption and mutual authentication
> program and at least one shim positioned above either the socket, transport driver
> interface, or network interface layers of a client computer to intercept function
> calls, requests for service, or data packets in order to communicate with the server
> and authenticate the parties to a communication and enable the parties to the
> communication to establish a common session key. Where the parties to the
> communication are peer-to-peer applications, the intercepted function calls,
> requests for service, or data packets include the destination address of the peer
> application, which is supplied to the server so that the server can authenticate the
> peer and enable the peer to decrypt further direct peer-to-peer communications.

Claims 2 and 7 are reproduced here as representative system and method claims, respectively.

2. A multi-tier virtual private network, comprising:
a server and a plurality of client computers, the server and client computers each including means for transmitting data to and receiving data from an open network, wherein said means for transmitting data to and receiving data from the open network includes, in any client computer initiating communications with the server:
applications level encryption and authentication software arranged to communicate with the server in order to: a.) mutually authenticate the server and the client computer initiating communications with the server and b.) generate a session key for use by the client computer initiating communications to encrypt files;
at least one lower level set of communications drivers;
and a shim arranged to intercept function calls and requests for service sent by an applications program to the lower level set of communications drivers in order to cause the applications level authentication and encryption program to communicate with the server, generate said session key, and encrypt files sent by the applications program before transmittal over said open network.

7. A method of carrying out communications over a multi-tier virtual private network, said network including a server and a plurality of client computers, the server and client computers each including means for transmitting data to and receiving data from an open network, wherein said means for transmitting data to and receiving data from an open network includes a lower set of communications drivers, said lower set of communications drivers being arranged to receive function calls and requests for service from an applications program in order to transmit and receive said data, comprising the steps of:
intercepting said function calls and requests for service sent by said applications program to said lower level set of communications drivers, said intercepted function calls and requests for service being limited to communications functions with no reference to encryption functions;
causing an applications level authentication and encryption program in said one of said client computers to communicate with the server in response to receiving said intercepted function calls and requests for service by generating a session key, using the session key generated by the applications level authentication and encryption program to encrypt file sent by the applications program, and sending function calls and requests for service to the lower level set of communications drivers in order to transmit said encrypted files over said open network.

II.   LEGAL PRINCIPLES

A.   Claim Construction

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at

861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. ITC*, 342 F.3d 1361, 1368 (Fed. Cir. 2003); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) ("There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.") (vacated on other grounds).

"The claim construction inquiry . . . begins and ends in all cases with the actual words of the claim." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998). "[I]n all aspects of claim construction, 'the name of the game is the claim.'" *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)). First, a term's context in the asserted claim can be instructive. *Phillips*, 415 F.3d at 1314. Other asserted or unasserted claims can also aid in determining the claim's meaning, because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). But, "'[a]lthough the specification may aid the

court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.'" *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. "[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004).

The prosecution history is another tool to supply the proper context for claim construction because, like the specification, the prosecution history provides evidence of how the U.S. Patent and Trademark Office ("PTO") and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. However, "because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Id.* at 1318; *see also Athletic Alternatives, Inc. v. Prince Mfg.*, 73 F.3d 1573, 1580 (Fed. Cir. 1996) (ambiguous prosecution history may be "unhelpful as an interpretive resource").

Although extrinsic evidence can also be useful, it is "'less significant than the intrinsic record in determining the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining

the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition are entirely unhelpful to a court. *Id*. Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id*. The Supreme Court recently explained the role of extrinsic evidence in claim construction:

> In some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. *See, e.g., Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be "so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning"). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the "evidentiary underpinnings" of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.

Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 841 (2015).

B. Departing from the Ordinary Meaning of a Claim Term

There are "only two exceptions to [the] general rule" that claim terms are construed according to their plain and ordinary meaning: "1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution."[2] *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see also GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) ("[T]he specification and prosecution history only compel departure from

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[2] Some cases have characterized other principles of claim construction as "exceptions" to the general rule, such as the statutory requirement that a means-plus-function term is construed to cover the corresponding structure disclosed in the specification. *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1367 (Fed. Cir. 2002).

the plain meaning in two instances: lexicography and disavowal."). The standards for finding lexicography or disavowal are "exacting." *GE Lighting Sols.*, 750 F.3d at 1309.

To act as his own lexicographer, the patentee must "clearly set forth a definition of the disputed claim term," and "clearly express an intent to define the term." *Id.* (quoting *Thorner*, 669 F.3d at 1365); *see also Renishaw*, 158 F.3d at 1249. The patentee's lexicography must appear "with reasonable clarity, deliberateness, and precision." *Renishaw*, 158 F.3d at 1249.

To disavow or disclaim the full scope of a claim term, the patentee's statements in the specification or prosecution history must amount to a "clear and unmistakable" surrender. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009); *see also Thorner*, 669 F.3d at 1366 ("The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.") "Where an applicant's statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable." *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

C.   Functional Claiming and 35 U.S.C. § 112, ¶ 6 (pre-AIA) / § 112(f) (AIA)[3]

A patent claim may be expressed using functional language. *See* 35 U.S.C. § 112, ¶ 6; *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). Section 112, Paragraph 6, provides that a structure may be claimed as a "means . . . for performing a specified function" and that an act may be claimed as a "step for performing a specified function." *Masco Corp. v. United States*, 303 F.3d 1316, 1326 (Fed. Cir. 2002).

But § 112, ¶ 6 does not apply to all functional claim language. There is a rebuttable presumption that § 112, ¶ 6 applies when the claim language includes "means" or "step for"

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[3] Because the application resulting in the Asserted Patent was filed before September 16, 2012, the effective date of the America Invents Act ("AIA"), the Court refers to the pre-AIA version of § 112.

terms, and that it does not apply in the absence of those terms. *Masco Corp.*, 303 F.3d at 1326; *Williamson*, 792 F.3d at 1348. The presumption stands or falls according to whether one of ordinary skill in the art would understand the claim with the functional language, in the context of the entire specification, to denote sufficiently definite structure or acts for performing the function. *See Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (§ 112, ¶ 6 does not apply when "the claim language, read in light of the specification, recites sufficiently definite structure" (quotation marks omitted) (citing *Williamson*, 792 F.3d at 1349; *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014))); *Williamson*, 792 F.3d at 1349 (§ 112, ¶ 6 does not apply when "the words of the claim are understood by persons of ordinary skill in the art to have sufficiently definite meaning as the name for structure"); *Masco Corp.*, 303 F.3d at 1326 (§ 112, ¶ 6 does not apply when the claim includes an "act" corresponding to "how the function is performed"); *Personalized Media Commc'ns, L.L.C. v. ITC*, 161 F.3d 696, 704 (Fed. Cir. 1998) (§ 112, ¶ 6 does not apply when the claim includes "sufficient structure, material, or acts within the claim itself to perform entirely the recited function . . . even if the claim uses the term 'means.'" (quotation marks and citation omitted)).

When it applies, § 112, ¶ 6 limits the scope of the functional term "to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof." *Williamson*, 792 F.3d at 1347. Construing a means-plus-function limitation involves multiple steps. "The first step . . . is a determination of the function of the means-plus-function limitation." *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). "[T]he next step is to determine the corresponding structure disclosed in the specification and equivalents thereof." *Id.* A "structure disclosed in the specification is

'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id.* The focus of the "corresponding structure" inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id.* The corresponding structure "must include all structure that actually performs the recited function." *Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). However, § 112 does not permit "incorporation of structure from the written description beyond that necessary to perform the claimed function." *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

For § 112, ¶ 6 limitations implemented by a programmed general purpose computer or microprocessor, the corresponding structure described in the patent specification must include an algorithm for performing the function. *WMS Gaming Inc. v. International Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). The corresponding structure is not a general purpose computer but rather the special purpose computer programmed to perform the disclosed algorithm. *Aristocrat Techs. Austl. Pty Ltd. v. International Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

D.   Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA)[4]

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. A claim, when viewed in light of the intrinsic evidence, must "inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). If it does not, the claim fails § 112, ¶ 2 and is therefore invalid as indefinite. *Id.* at 2124. Whether a claim is indefinite is determined from the perspective of one of ordinary skill in the art as of the time the application

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[4] Because the application resulting in the Asserted Patent was filed before September 16, 2012, the effective date of the America Invents Act ("AIA"), the Court refers to the pre-AIA version of § 112.

for the patent was filed. *Id.* at 2130. As it is a challenge to the validity of a patent, the failure of any claim in suit to comply with § 112 must be shown by clear and convincing evidence. *Id.* at 2130 n.10. "[I]ndefiniteness is a question of law and in effect part of claim construction." *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012).

When a term of degree is used in a claim, "the court must determine whether the patent provides some standard for measuring that degree." *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1378 (Fed. Cir. 2015) (quotation marks omitted). Likewise, when a subjective term is used in a claim, "the court must determine whether the patent's specification supplies some standard for measuring the scope of the [term]." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1351 (Fed. Cir. 2005); *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (citing *Datamize*, 417 F.3d at 1351).

In the context of a claim governed by 35 U.S.C. § 112, ¶ 6, the claim is invalid as indefinite if the claim fails to disclose adequate corresponding structure to perform the claimed functions. *Williamson*, 792 F.3d at 1351–52. The disclosure is inadequate when one of ordinary skill in the art "would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim." *Id*. at 1352.

III.   CONSTRUCTION OF AGREED TERMS

The parties have agreed to the following constructions in their Joint Claim Construction Chart Pursuant to P.R. 4-5(d) (Dkt. No. 79):

Term[5]	Agreed Construction
Claim 2 preamble	not limiting

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[5] For all term charts in this order, the claims in which the term is found are listed with the term but: (1) only the highest level claim in each dependency chain is listed, and (2) only asserted claims identified in the parties' Joint Claim Construction Chart Pursuant to P.R. 4-5(d) (Dkt. No. 79) are listed.

Term[5]	Agreed Construction
"multi-tier" • Claims 2, 4, 7	more than one level or layer
"virtual private network" • Claims 2, 4, 7	a system for securing communications between computers over an open network
"server" • Claims 2, 4, 7	software running on a computer that provides services to client computers
"plurality" • Claims 2, 4, 7	more than one
"client computer" • Claims 2, 4, 7	a computer that requests data or services from a server
"means for transmitting data to and receiving data from an open network" • Claims 2, 4, 7	Not 35 U.S.C. § 112, ¶ 6.
"authentication and encryption program" / "encryption and authentication software" • Claims 2, 4, 7	a program that verifies the identity of a client or server and renders data unintelligible without decrypting
"mutually authenticate the server and the client computer initiating communications with the server" • Claims 2, 4, 7	a server verifies the identity of the client computer and the client computer verifies the identity of the server
"session key" • Claims 2, 4, 7	a sequence of bits that is input into an encryption algorithm to encrypt data for a session
"generate a session key" • Claims 2, 4, 7	to produce a session key
"encrypt" • Claims 2, 4, 7	to render unintelligible without decrypting

Term[5]	Agreed Construction
"lower level set of communications drivers" / "lower set of communications drivers" • [Claims 2, 4, 7]	set of communications drivers below the applications layer"
"a shim" • [Claims 2, 4]	software added between two existing software layers, which utilizes the same function calls of the existing layers
Claim 4 preamble.	Limiting.

Having reviewed the intrinsic and extrinsic evidence, the Court adopts the parties' agreed

constructions.

IV. CONSTRUCTION OF DISPUTED TERMS

The parties' positions and the Court's analysis as to the disputed terms are presented

below.

A. "applications level"

Disputed Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
"applications level" • Claims 2, 4, 7	Plain and ordinary meaning.	the highest software level/layer that is above the levels/layers at which sockets are located

The Parties' Positions

Plaintiff submits that the term "applications level" is used in the '011 Patent pursuant to

its plain and ordinary meaning and that its meaning is readily understood without construction.

Dkt. No. 71 at 10. According to Plaintiff, the "applications" are software applications and the

"applications level" is the "level" where the software applications are installed. *Id*. Plaintiff

argues the Court has already found that "applications level" does not need construction because

it previously found that a larger term containing "applications level" did not need construction.

Id. at 11 (citing *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364, 387–88 (E.D. Tex. 2011)).

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Plaintiff argues that Defendant's proposed construction should be rejected because it: (1) imports limitations from the exemplary embodiments without justification, (2) excludes the exemplary embodiment in which a sockets level is not present (citing '011 Patent col.2 ll.58–65, col.3 ll.43–47, col.7 ll.29–34, col.10 ll.27–29), (3) imports a "socket" limitation that is expressed in a dependent claim (citing Claims 3 and 5), and (4) does not clarify claim scope because it is unclear whether the "highest" level is the highest level in the stack or the next highest level above the sockets level. *Id.* at 11–13.

In addition to the claims, Plaintiff cites the following **intrinsic evidence** to support its position: '011 Patent col.1 ll.58–60, col.2 ll.13–20, col.2 ll.49–65, col.3 ll.7–14, col.3 ll.33 – col.4 l.15, col.7 ll.29–34, col.10 ll.27–29, figs.2–5.

Defendant responds that the intrinsic record clearly establishes that the "applications level" is separate from and above the sockets level. Dkt. No. 75 at 11–12. Defendant contends that the "applications level" is the highest level (or layer) recited in the claims because it is necessarily at a higher level than the shim and the shim may be positioned above the other levels. *Id.* at 13. According to Defendant, the patent's description shows this hierarchy in that: (1) the "applications level" is the highest level in each exemplary embodiment (citing '011 Patent col.2 ll.58–65), (2) the "applications level" is equated with "the highest level" (quoting '011 Patent col.4 ll.63–67), and (3) the "applications level" is described as distinct and separate from the socket layer (citing '011 Patent col.9 ll.48–52). *Id.* at 13–14. Defendant further responds that in the course of prosecuting the original application and the reexamination of the '011 Patent, the patentee clearly stated that the "applications level" is distinct from and above the "sockets level." *Id.* at 14–16. Defendant argues the patent issued from reexamination because the patentee convinced the examiner that the sockets level "is not part of the applications level." *Id.* at 16

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(quoting November 29, 2012 Notice of Intent to Issue Ex Parte Reexamination Certificate (Dkt. No. 75-8)).

Defendant contends that its proposed construction does not exclude any exemplary embodiment for two reasons. First, because the '011 Patent does not include an embodiment without a sockets level. *Id*. at 17. Second, because the proposed construction does not require a sockets level—it only requires that the "applications level" be distinct from and above a sockets level if the sockets level is present. *Id*. at 17.

In addition to the claims, Defendant cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '011 Patent col.2 ll.58–65, col.4 ll.63–67, col.8 ll.38–42, col.9 ll.48–52, fig.2–5; '011 Patent File Wrapper February 26, 1999 Preliminary Amendment (Defendant's Ex. C, Dkt. No. 75-3), October 17, 2012 Response in Reexamination 90/011,242 (Defendant's Ex. D, Dkt. No. 75-4), November 9, 2012 Response in Reexamination 90/011,242 (Defendant's Ex. E, Dkt. No. 75-5), November 9, 2012 Patentee's Interview Statement in Reexamination 90/011,242 (Defendant's Ex. F, Dkt. No. 75-6), November 11, 2012 Examiner's Interview Summary in Reexamination 90/011,242 (Defendant's Ex. G, Dkt. No. 75-7), November 29, 2012 Notice of Intent to Issue Ex Parte Reexamination Certificate (Defendant's Ex. H, Dkt. No. 75-8). **Extrinsic evidence**: Plaintiff's Infringement Contentions (excerpts) (Defendant's Ex. L, Dkt. No. 75-12); Plaintiff's Technical Tutorial (excerpts), *SSL Services, LLC v. Citrix Systems, Inc.*, No. 2:08-cv-158 (Defendant's Ex. M, Dkt. No. 75-13).

Plaintiff replies that the plain and ordinary meaning of "applications level" allows the sockets to be part of the applications level. Dkt. No. 76 at 4. Plaintiff argues that "applications level" was not defined otherwise through lexicography or disclaimer in the '011 Patent or in its prosecution history. *Id*. at 4–7. Specifically, Plaintiff argues that the patentee's statement that

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"the present invention inserts a shim between the sockets layer and the applications programs that use the sockets layer" is understood in context of the entire patent to mean that the invention is directed to placing a shim between levels, not to the location of the sockets level. *Id.* at 6. Plaintiff argues that the patentee's characterizations of the location of the Winsock socket in the distinguished prior art simply recognize that the Winsock socket is not part of the applications level—it is not an unambiguous disclaimer of a socket being part of the applications level. *Id.* at 6–7.

Plaintiff cites further **intrinsic evidence** to support its position: '011 Patent figs.2–5; '011 Patent File Wrapper February 26, 1999 Preliminary Amendment (Defendant's Ex. C, Dkt. No. 75-3), October 17, 2012 Response in Reexamination 90/011,242 (Defendant's Ex. D, Dkt. No. 75-4), November 9, 2012 Response in Reexamination 90/011,242 (Defendant's Ex. E, Dkt. No. 75-5), November 9, 2012 Patentee's Interview Statement in Reexamination 90/011,242 (Defendant's Ex. F, Dkt. No. 75-6), November 11, 2012 Examiner's Interview Summary in Reexamination 90/011,242 (Defendant's Ex. G, Dkt. No. 75-7).

<u>Analysis</u>

The parties dispute two issues: first, whether the sockets level and the applications level must be distinct, and second, whether all socket-like operations must occur at the sockets level. As to the first, the Court finds that the applications level and the sockets level must be distinct and that operations that occur at the sockets level do not occur at the applications level. As to the second, the Court finds that the use or presence of sockets is not mandated by the patent or its prosecution history and the intrinsic evidence does not require all socket-like operations to occur on the sockets level.

Consistent with the plain and ordinary meaning of "level," the patent describes the software levels (or layers) as distinct and complementary libraries of software routines:

> First, the concept of "layers," "tiers," and "levels," which [is] essential to an understanding of the invention, simply refers to libraries or sets of software routines for carrying out a group of related functions, and which can conveniently be shared or called on by different programs at a higher level to facilitate programming, avoiding duplication and maximizing computer resources.

'011 Patent col.2 ll.50–58.

The "levels" are distinct because they are not duplicative. The patent explains the benefit of distinct levels. Distinct levels allow applications to be created without the developer having to incorporate into an application all of the functionality necessary for communication with the application:

> By providing layers in this manner, an applications software programmer can design an application program to supply data to the TDI layer without having to re-program any of the specific functions carried out by that layer, and all of the transmission, verification, and other functions required to send a message will be taken care of [by] the TDI layer without further involvement by the applications software. In a sense, each "layer" simply accepts data from the higher layer and formats it by adding a header or converting the data in a manner which is content independent, with retrieval of the data simply involving reverse conversion or stripping of the headers, the receiving software receiving the data as if the intervening layers did not exist.

Id. at col.3 ll.7–19.

The sockets level in the '011 Patent is a "level." Specifically, the sockets level provides libraries of software routines that act as an interface between applications (at the applications level) and the transport driver level. As described in the patent:

> Some applications are written to directly call upon the TCP functions. However, for most applications utilizing a graphical user interface conveniently rely on a set of software routines which are considered to operate above the TDI layer, and are known as sockets. Sockets serve as an interface between the TCP set of functions, or stack, and various applications, by providing libraries of routines which facilitate TCP function calls, so that the application simply has to refer to the socket library in order to carry out the appropriate function calls. For Windows applications, a commonly used non-proprietary socket is the Windows socket,

known as Winsock, although sockets exist for other operating systems or platforms, and alternative sockets are also available for Windows, including the Winsock 2 socket currently under development.

Id. col.3 ll.43–57.

Unpacked, the passage above states that similar to the shims of the patent, the sockets level fits between two levels of the communication hierarchy, namely, the applications level and the transport driver level. As with the other levels in the communication hierarchy, the sockets level facilitates application development by moving functionality away from the application. For example, the patent discusses Winsock, an exemplary socket on the sockets level. Winsock allows applications "to refer to the socket library in order to carry out the appropriate function calls." *Id*. col.3 ll.51–52.

The Court finds based on the plain and ordinary meaning of "level" that the plain and ordinary meaning of "applications level" means that the "sockets level" and "applications level" are distinct, just as the "applications level" and the "transport driver level" are distinct. The Court also notes that the patentee throughout prosecution used "applications level" in a manner that is consistent with the understanding that the "applications level" is distinct from the "sockets level." *See, e.g.*, February 26, 1999 Preliminary Amendment at 4–5 (Dkt. No. 75-3 at 5–6) (noting the difference between the "sockets layer" and the "application programs that use the sockets layer"); November 9, 2012 Patentee's Interview Statement in Reexamination 90/011,242 at 1–2 (Dkt. No. 75-6 at 2–3) (noting that Winsock is in a level distinct from the applications level). Indeed, the patentee said that encryption on a level below the applications level is not an applications level encryption. *See* November 9, 2012 Response in Reexamination 90/011,242 at 3–4, 10–12 (Dkt. No. 75-5 at 4–5, 11–13) (noting that encryption by a program at a level below the applications level is not applications-level encryption); February 16, 2012 Request for Reconsideration in Reexamination 90/011,242 at 3–5 (Dkt. No. 75-9 at 4–6) (same); *see also*

Citrix Appeal, 769 F.3d at 1089–90 (adopting Plaintiff's position and affirming that Claims 2, 4, and 7 were not proven invalid because the prior-art encryption was on a level other than the applications level).

In addition to finding the "applications level" and the "sockets level" distinct Defendant asks the Court to find (1) that the "applications level" is the "highest software level" and (2) that all sockets are located outside the "applications level." (*See* Dkt. No. 75-3 at 11 ("above the levels/layers at which **the sockets** are located") (emphasis added).) The Court rejects these arguments because Defendant has not shown the plain and ordinary meaning of "applications level" includes these limitations and has not pointed to any disclaimer that supports a deviation from the plain and ordinary meaning.

Whether the applications level is the highest level. The Court finds that a construction of "applications level" which includes "highest level" would be too narrow. The Court agrees with Defendant that the patent shows the "applications level" as the "highest level" in all embodiments and states "SmartGATE operates at the highest level, or applications level." '011 Patent col.4 ll.63–64. The Court finds that these passages show that the "applications level" is the "highest level" of the specific stack discussed in the patent but the passages do not show that the "applications level" is the "highest level" of any stack under any context. "The only meaning that matters in claim construction is the meaning in the context of the patent." *Trustees of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1363 (Fed. Cir. 2016). Thus, the Court having considered the context of the '011 Patent finds that a party cannot assert the "applications level" is below the "levels" that perform the functions of the lower levels in the '011 Patent. The Court, however, rejects Defendant's proposed construction because it does not account for the

context of the '011 Patent and can be read to mean the "applications level" is the "highest level" in any stack including those not described in the '011 Patent.

Whether all sockets are outside the applications level. The Court has read "applications level" in light of the intrinsic record and finds that the patent does not require all things which perform socket-like operations, that is, all things that could be "sockets," to be outside the "applications level." *See Columbia Univ.*, 811 F.3d at 1364. The finding is based on the following reasoning. The patent states: "Sockets serve as an interface between the TCP set of functions . . . and [] applications, by providing libraries of routines which facilitate TCP function calls." '011 Patent col.3 ll.47–49. Sockets serve as interfaces between applications and the TCP stack. However, the patent states that a system "can [also] include . . . [software] applications which **directly call upon** a transport driver interface stack." '011 Patent col.9 ll.25–26 (emphasis added). For example, Figure 3 and the accompanying specification passage describe peer-to-peer ("P2P") applications "directly" calling on the transport driver interface ("TDI") stack. *See* '011 Patent at fig.3, item 37 (referring to "applications which directly call upon a transport driver interface stack").

That P2P applications can "directly" call on the TDI stack means P2P applications might perform a socket-like operation by "providing libraries of routines for facilitating TCP function calls" and exist on the "application level." Thus, "applications level" and "sockets level" are distinct but "applications level" should not be read to necessarily exclude all "sockets." Nor should it be read to require a separate "sockets level." The description of P2P applications shows that some things that may be "applications" do not need the sockets level to communicate with the TDI stack and may themselves be considered "sockets" because they perform socket-like operations by providing libraries of routines for communication. *See*, '011 Patent at col.3 ll.43–

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44 ("Some applications are written to directly call upon the TCP functions."); February 16, 2012 Request for Reconsideration in Reexamination 90/011,242 at 4 (Dkt. No. 75-9 at 5) ("As a preliminary matter, a person of ordinary skill would understand that there are many programs that are considered to be 'applications' running at 'application level' which do not utilize the sockets interface (e.g., word processing programs, calculator programs, spreadsheet programs).").

The Court's finding is consistent with the doctrine of claim differentiation which suggests that "sockets" should not be read into claim 2. Claims 3 and 5 depend from Claims 2 and 4 respectively and Claims 2 and 4 expressly recite using a socket as an interface between the applications and the transport driver level. Indeed, the patent states that the shim of the invention is not necessarily a "socket shim." *See, e.g.*, col.10 ll.43–48, Claim 3 (reciting "wherein said shim is a socket shim"), Claim 5 (same).

Finally, the Court notes that many of these issues are not issues of claim construction because whether a piece of software operates on the "applications level," "the sockets level," or another "level" is an issue of fact that turns on the design of the accused device. For example, the Court cannot, in claim construction, conclude that all software labeled as a "socket" exists on the "sockets level" because whether one skilled in the art would consider a piece of software located outside the sockets level to be a "socket" depends on the function of that software in the accused device. These issues should be addressed on infringement or invalidity.

Accordingly, the Court construes the "applications level" as follows:

- "applications level" means "software level, within the communications hierarchy, where applications are installed."

B. The Intercept Terms

Disputed Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
"intercept" / "intercepting" • Claims 2, 4, 7	Plain and ordinary meaning.	receive/receiving a communication that is not addressed for the shim
"intercept function calls and requests for service" • Claim 2	Plain and ordinary meaning.	using a shim to [receive] a request for a desired function, service, operation, or event [that is not addressed for the shim]
"intercept said function calls and requests for service"[6] • Claim 4		
"intercepting said function calls and requests for service" • Claim 7		

Because the parties' arguments and proposed constructions with respect to these terms are related, the Court addresses the terms together.

The Parties' Positions

Plaintiff submits the "intercept" and "intercepting" terms can be understood according to their plain and ordinary meaning. Dkt. No. 71 at 13. Plaintiff argues that the Court has already determined once that the meaning of "intercept" needs no explanation. The Court used the term in its previous construction of the '011 Patent and rejected a construction of "intercepting" as a form of "receiving." *Id*. at 13–14, 16 n.37 (citing *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364, 378–81, 386–87, 393–94 (E.D. Tex. 2011)). Plaintiff submits that Defendant's proposed

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[6] The parties presented the term "intercepting function calls and requests for service" for construction but the Court does not find that term in any of the asserted claims. But the Court notes that "intercept said function calls and requests for service" is found in Claim 4 and should be understood according to the same analysis as applied to the other Intercept terms.

construction should be rejected because (1) it requires "communications" to be intercepted when the claims state that "function calls and requests for service" are intercepted and (2) it excludes the exemplary embodiment in which the "function calls and requests for service" are addressed to the shim by virtue of the shim having the same addressing as another layer. *Id*. at 14–15 (citing '011 Patent col.3 ll.20–26, col.9 ll.52–54).

With respect to "function calls and requests for service," Plaintiff submits the meanings of these words are readily apparent to one of skill in the art without construction. *Id*. at 15. Plaintiff argues the Court recognized the meanings are understood without construction when it accorded the terms their plain meaning in *Citrix*. *Id*. at 15–16 (citing *Citrix*, 816 F. Supp. 2d at 378–81).

In addition to the claims, Plaintiff cites the following **intrinsic evidence** to support its position: '011 Patent, at [57] Abstract, col.3 ll.20–26, col.6 ll.42–45, col.9 ll.47–54, col.10 ll.35–37.

Defendant responds that the Court in *Citrix* determined that the intercepting terms needed to be construed, and construed "intercept/intercepting function calls and requests for service" as "using a shim to intercept or divert a request of a desired function, service, operation or event." Dkt. No. 75 at 18 (citing *SSL Servs., LLC v. Citrix Sys.*, No. 2:08-cv-158, Dkt. No. 123 at 22–27 (E.D. Tex. Sept. 20, 2011)).[7] Defendant argues this construction is binding on Plaintiff under the doctrine of collateral estoppel. *Id*. at 18–19 (citing *Pfaff v. Wells Electronics, Inc.*, 5 F.3d 514, 518 (Fed. Cir. 1993); *Molinaro v. Fannon/Courier Corp.*, 745 F.2d 651, 655 (Fed. Cir. 1984); *Pace v. Bogalusa City Sch. Bd.*, 403 F.3d 272, 290 (5th Cir. 2005)).

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[7] *SSL Servs., LLC v. Citrix Sys.*, No. 2:08-cv-158, Dkt. No. 123 (E.D. Tex. Sept. 20, 2011) is the slip opinion that is reported as *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364 (E.D. Tex. 2011).

Defendant further responds that its proposed construction should be adopted because it is identical to the *Citrix* construction, except for the reference to "or divert" and the explanation of what it means to "intercept." *Id.* at 19–20. The "or divert" language should be removed, argues Defendant, because it is not synonymous with "intercept" and because it is not supported by the intrinsic record. *Id.* at 20. Defendant contends the concept of "diverting" is more properly contained in a separate limitation, the "causing the application level authentication and encryption program [to perform functions]" limitation. *Id.* Defendant contends that the '011 Patent distinguishes between diverting and intercepting. *Id.* at 20–21 & n.13 (citing '011 Patent col.9 ll.52–64, col.10 ll.31–33, col.10 ll.35–38, col.10 ll.49–50).[8]

With respect to "intercept" and "intercepting," Defendant responds that the terms do not encompass receiving information addressed to the shim for three reasons. *Id.* at 21–24. First, the claims expressly state that the shim intercepts function calls and requests sent to something other than the shim. *Id.* at 22–23 (citing Claim 2). Second, the exemplary embodiments are described as the shim intercepting function calls made to something other than the shim. *Id.* at 23 (citing '011 Patent col.9 ll.52–54). Third, in the course of prosecuting the reexamination, the patentee expressly stated that software that receives information addressed to it is not intercepting that information. *Id.*

Finally, Defendant responds that interception **by the shim** is a limitation of every claim. *Id.* at 24–25. According to Defendant, such a limitation is expressed in Claims 2 and 4, and is also expressed in the description, as the Court held in *Citrix*. *Id.* at 24 (citing *Citrix*, No. 2:08-cv-158, Dkt. No. 123 at 24; '011 Patent col.6 ll.52–45, col.7 ll.1–4, col.9 ll.52–54, col.10 l.49).

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[8] Defendant has no objection to replacing "communications" in its proposed construction with the claim language, "function calls and requests for service." *Id.* at 22.

In addition to the claims, Defendant cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '011 Patent col.6 ll.42–45, col.7 ll.1–4, col.9 ll.52–54, col.10 ll.31–33, col.10 ll.35–38, col.10 ll.49–50; '011 Patent File Wrapper November 9, 2012 Response in Reexamination 90/011,242 (Defendant's Ex. E, Dkt. No. 75-5), February 16, 2012 Request for Reconsideration in Reexamination 90/011,242 (Defendant's Ex. I, Dkt. No. 75-9). **Extrinsic evidence**: Plaintiff's Infringement Contentions (excerpts) (Defendant's Ex. L, Dkt. No. 75-12).

Plaintiff replies that the '011 Patent describes that a shim can intercept data addressed for the shim and that a shim can intercept information by diverting the information. Dkt. No. 76 at 8–10. Plaintiff argues that the patentee's characterization of the prior art during prosecution recognized a number of failings of the prior art. First, that the references did not disclose a shim intercepting "function calls and requests for services . . . to communications drivers" because the alleged shim did not have any communication drivers below it. *Id*. at 8 (citing February 16, 2012 Request for Reconsideration in Reexamination 90/011,242 at 6 (Dkt. No. 75-9 at 7)). Second, the references did not disclose a shim arranged between two layers of the stack. *Id*. Third, the references did not disclose intercepting information; rather, they disclosed information travelling in a direct unimpeded path from source to destination. *Id*. at 9.

Plaintiff cites further **intrinsic evidence** to support its position: '011 Patent col.6 ll.29–35; '011 Patent File Wrapper February 16, 2012 Request for Reconsideration in Reexamination 90/011,242 (Defendant's Ex. I, Dkt. No. 75-9).

<u>Analysis</u>

To begin, the Court does not reach the issue of collateral estoppel because the Court reaches the same construction as in *Citrix*. Defendant's position, that Plaintiff is estopped from arguing against the previous construction, is moot.

Otherwise, there are two main points of dispute. First, whether information "diverted" by the shim can be considered "intercepted" by the shim. Second, whether information addressed to the shim can be considered "intercepted" by the shim. The Court finds that the way in which information is intercepted in the patent includes "diverting" the information off its intended path, as the Court explained in *Citrix* and that information addressed to the shim can be considered intercepted by the shim.

The Court rejects Defendant's argument that "intercepted" excludes "diverted" in the '011 Patent. The Court said in *Citrix* that "intercepted" does not mean "seized" but means "diverted" or "rerouted." *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364, 378–81 (E.D. Tex. 2011). Indeed, the Court finds here that the description and claim language equates, not distinguishes, "intercept" and "divert." For example, the patent states that the socket and TDI shim "intercept[] function calls to the socket or transport driver and **directs** calls to the authentication server in order to perform encryption and authentication routines." '011 Patent col.6 ll.51–57 (emphasis added). The patent further states the socket shim "intercept[s] call initiating function calls 40 made to the socket . . . [to] have the authentication client software initiate communications with the authentication server . . . in order to carry out the authentication protocol." *Id*. at col.9 ll.46–58. The socket shim then "causes files 41 intended for the TDI layer to be **diverted** to the authentication software for encryption." *Id*. at col.9 ll.58–64 (emphasis added). The patent summarizes the shim's "interception" function:

> Like the socket shim, implementation of the TDI shim essentially simply involves diverting certain information to the client software in order to establish a communications link with the authentication server, and subsequently perform encryption to obtain encrypted files 54 for transmission directly through the TDI layer in the usual manner.

Id. at col.10 ll.29–35. That is, the shim "diverts" information to the authentication and encryption software in order to cause the encryption and other processing.

This understanding of "intercept" comports with the claim language. Claim 2 says that the shim is arranged to "intercept" information "in order to cause the applications level authentication and encryption program" to encrypt and otherwise process the information. '011 Patent col.13 ll.16–23. Just as the description says the information is "diverted" in order to cause encryption and other processing, the claim states the information is "intercepted" in order to cause encryption and other processing. Thus, "intercept"/"intercepting" in the '011 Patent means "divert"/"diverting."

Furthermore, the Court does not understand that in the '011 Patent, "intercepting" is broader than "diverting" from the intended path. It is true that '011 Patent describes an NDIS shim that "intercepts" IP packets but does not "divert" those packets to the applications level encryption program. '011 Patent col.10 ll.42–62. But those packets are not "seized." They are sent to encryption and other processing routines not in the intended path from the transport driver layer ("TDI") to the network driver layer ("NDIS"). *Id*. The processed packets then continue on to the network driver layer. *Id*. That is, the packets are "diverted" off their intended path. As in *Citrix*, the Court concludes that "the claim language indicates that intercepting is the same as diverting." *Citrix*, 816 F. Supp. 2d at 379.

The Court also rejects Defendant's argument that "intercepted" by the shim cannot include "addressed" to the shim. The '011 Patent does not reference a shim diverting information that is addressed to the shim. However, the Court does not understand the plain meaning of

"intercepting" to preclude such a possibility. For example, information can be addressed to two intended recipients, one of them the shim. The shim then "diverts" the information from reaching the other intended recipient. The Court understands that the information is still "intercepted." Defendant's citations to the prosecution history do not disclaim this scenario. Rather, the prosecution history states that something that reaches its intended destination along its intended path is not "intercepted." *See, e.g.*, November 9, 2012 Response in Reexamination 90/011,242 at 5 (Dkt. No. 75-5 at 6) ("The fact that the application program sends data ***directly*** to its ***intended*** destination means that it is not an 'interception' at all." (emphases in original)). This is not a disclaimer, this is simply an explanation of the plain meaning of "interception."

In sum, nothing in the patent or prosecution history mandates that the "function calls and requests for service" sent to the "lower level set of communications drivers" may not be sent to the shim. And, if they are sent to the shim, there is nothing in the patent or prosecution history that mandates that the shim may not intercept the "function calls and requests for service" sent to the "lower level set of communications drivers." Thus, an accused process or device that addresses function calls and requests for service to the shim does not automatically fall outside the scope of the claims.

Accordingly, the Court reiterates is holding in *Citrix*, with slight clarifications as follows:

- "intercept" / "intercepting" means "divert / diverting from its intended path";
- "intercept function calls and requests for service" means "use a shim to divert a request of a desired function, service, operation, or event";
- "intercepting function calls and requests for service" means "using a shim to divert a request of a desired function, service, operation, or event"; and

- "intercepting said function calls and requests for service" means "using a shim to divert a request of a desired function, service, operation, or event."

C. "encrypt files" / "files"

Disputed Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
"files" • Claims 2, 4, 7	a set of data used by a program	named sets of data used by a program
"encrypt files" • Claims 2, 4, 7	to render a set of data used by a program unintelligible without decrypting	to render, without first packaging into datagrams or packets, named sets of data used by a program unintelligible without decrypting

The Parties' Positions

Plaintiff submits that the Court should construe "files" and "encrypt files" as it previously construed the terms, namely, as "a set of data used by a program" and "to render a set of data used by a program unintelligible without decrypting," respectively. Dkt. No. 71 at 16, 18 (citing *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364, 385 (E.D. Tex. 2011)). Plaintiff submits that the Defendant's proposed construction should be rejected because (1) it requires that files be "named," which is contrary to the term's plain meaning and is unsupported by the intrinsic record and (2) it requires the encryption to occur "without first packaging into datagrams or packets," which was rejected by the Court in *Citrix* and is unsupported by the intrinsic record. *Id.* at 17–18 (citing *Citrix*, 816 F. Supp. 2d at 384–85).

Defendant responds that the Court in *Citrix* explained that "encrypting files" was encryption at a file level—it does not include encrypting data packets or datagrams. Dkt. No. 75 at 26–27 (citing *SSL Servs., LLC v. Citrix Sys.*, No. 2:08-cv-158, Dkt. No. 123 at 31–32 (E.D.

Tex. Sept. 20, 2011). Defendant contends that the '011 Patent distinguishes between file-level encryption and packet-level encryption. *Id.* at 27–28 (citing '011 Patent col.10 l.63 – col.11 l.2).

The Court previously stated that the distinction between file-level and packet-level encryption "does not mean that an accused device that encrypts packets automatically falls outside the scope of the claims." Defendants interpret this to mean that so long as there is file-level encryption whether there is packet-level encryption is irrelevant. *Id.* at 27. Defendant argues this means file-level encryption must happen before the file is packaged into packets or datagrams. *Id.* at 28.

Defendant further responds that file-level encryption is mandated by the plain meaning of term which says "encrypt file"— not "encrypt data"—and by the description of the invention. *Id.* at 28–29. Specifically, Defendant contends that the applications-level encryption embodiments, depicted in Figures 3 and 4, are described as encrypting files before they are packetized. *Id.* at 29 (citing '011 Patent col.3 ll.21–29). Defendants also note that the Figure 5 embodiment has only one shim which is between the TDI layer and the NDIS layer and does not have applications-level encryption, so it is not claimed. *Id.* at 30 (citing '011 Patent col.10 l.42 – col.11 l.2). Defendant finally contends that "files" are distinct from "datagrams" and "packets" in the patent (citing '011 Patent col.8 ll.55–56, col.9 ll.34–45, figs.2–5). *Id.* at 30.

With respect to "files," Defendant responds that the extrinsic evidence relied on by the Court in *Citrix* defines a file as "a complete, named collection of information, such as . . . a set of data used by a program." *Id.* at 30–31 (citing *Citrix Sys.,* No. 2:08-cv-158, Dkt. No. 123 at 31–32; *Microsoft Press Computer Dictionary* 194 (3d ed. 1997) (Dkt. No. 75-10 at 5)). Defendant advocates that this "named" aspect of the definition should be incorporated into the construction

of "files" to clarify that "packets" and "datagrams" are not "files," as the Court previously explained. *Id.*

In addition to the claims, Defendant cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '011 Patent col.3 ll.21–29, col.8 ll.55–56, col.9 ll.34–35, col.10 l.42 – col.11 l.2, figs.3–5. **Extrinsic evidence**: *Microsoft Press Computer Dictionary* (3d ed. 1997) ("file") (Defendant's Ex. J, Dkt. No. 75-10).

Plaintiff replies that under the Court's construction of "encrypt files" in *Citrix*, and under the plain meaning of the term as used in the '011 Patent, a file may be encrypted after the file has been packaged into datagrams or packets. Dkt. No. 76 at 10–11. Plaintiff replies that under the Court's construction of "files" in *Citrix* and under the plain meaning of the term as used in the '011 Patent, a file need not be named. *Id.* at 11–12. Thus, Plaintiff contends, incorporating the "named" limitation from the extrinsic evidence is an improper use of extrinsic evidence in that it would narrow the meaning of "file" as used in the patent. *Id.*

Plaintiff cites further **intrinsic evidence** to support its position: '011 Patent col.2 l.65 – col.3 l.7, col.3 ll.20–28, col.10 l.63 – col.11 l.2.

Analysis

The issue distills down to whether encrypting "files" includes encrypting "datagrams" or "packets." The Court finds that, as those terms are used in the '011 Patent, it does not. The Court understands "encrypt files" in the same way it understood the term in *Citrix* which is that "files" does not "include [the] 'packets,' 'datagrams,' or other types of communications" described in the specification of the '011 Patent. *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364, 384–85 (E.D. Tex. 2011).

The Court in *Citrix* held that an applications level encryption software that "encrypts files" cannot encrypt the "datagrams" and "packets" of the patent because the applications level encryption software exists on the applications level and the "datagrams" and "packets" exist on the transport driver level below the applications level. These "datagrams" and "packets" do not exist above the transport driver level because they are created when the transport driver level formats information for transmission over a network. *See id*. ("As stated in the patent, it is the TDI layer (below the application layer) where datagrams and packets are formed. . . . Simply stated, 'encrypted files' from the application layer are not encrypted datagrams or packets."); '011 Patent col.2 l.66–col.3 l.3.2, col.8 ll.37–65.

That said the Court does not find "files" to exclude "datagrams" or "packets" as the terms may be generally used in the art. Whether data at the applications level that is labeled a "datagram" or "packet" constitutes a "file" is a question of fact that turns on how the "files" function in a particular device. The patent does not say that "files" cannot be represented as "packets" or "datagrams" at the applications level. The patent also does not say that "packets" and "datagrams" cannot be created at other levels. The patent only teaches that "files" cannot be the "packets" or "datagrams" created by the transport driver level as described in the specification. Thus, a device that encrypts "datagrams" or "packets" does not automatically fall outside the scope of the claims.

Finally, the Court finds that the "naming" limitation on "file" is not appropriate. The Court finds it unclear what it means for data to be "named." There is nothing in the patent that mandates files have "names." At the hearing, while they still disagreed as to whether a file inherently has a "name," the parties agreed that a file must be identifiable. The Court will not

add language that does not clarify claim scope. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997).

Accordingly, the Court construes "files" and "encrypt files" as follows:

- files" means "identifiable sets of data used by a program"; and

- "encrypt files" means "to render identifiable sets of data used by a program unintelligible without decrypting."

D. **"computer software for installation on a client computer of a multi-tier virtual private network"**

Disputed Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
"computer software for installation on a client computer of a multi-tier virtual private network" • Claim 4	Plain and ordinary meaning.	This term is broad enough to include instances of software embodied in transitory signals, which is not statutory subject matter under 35 U.S.C. § 101.

The Parties' Positions

Plaintiff submits the parties have already agreed on the meanings of "client computer," "multi-tier," and "virtual private network" and that the remaining words of "computer software for installation on a client computer of a multi-tier virtual private network," namely, "computer," "software," and "installation" are readily understood without construction. Dkt. No. 71 at 18. Thus, Plaintiff contends, the term is understood without construction. *Id*. Plaintiff argues that the term, and therefore Claim 4, is not directed to "transitory signals" and thus does not trigger the proscription against claiming "transitory" material as stated in *In re Nuijten*, 500 F.3d 1346, 1353–57 (Fed. Cir. 2007). *Id*. at 19–20. Rather, Plaintiff contends that Claim 4 is directed to "computer software" that is "installed on a client computer" and is therefore not transitory. *Id*. at 20.

Defendant responds that Claim 4 is directed to unembodied software and is not patentable subject matter under 35 U.S.C. § 101. Dkt. No. 75 at 32 (citing *Nuijten*, 500 F.3d at 1353–57; *Allvoice Devs. US, LLC v. Microsoft Corp.*, 612 F. App'x 1009, 1018 (Fed. Cir. 2015); *Digitech Image Techs, LLC v. Elecs. For Imaging, Inc.*, 758 F.3d 1344, 1349-50 (Fed. Cir. 2014)). Defendant contends that the plain meaning of the claim language is that it is uninstalled software—it recites "computer software *for installation* on a client computer." *Id*. at 33 (quoting Claim 4, emphasis added by Defendant). Defendant contends that nothing in the claim or the entire '011 Patent indicates a tangible medium embodying the software from which it can be installed on a computer. *Id*.

Plaintiff replies that "software for installation" is necessarily embodied on a non-transitory storage medium and therefore is not subject to the *Nuijten* proscription. Dkt. No. 76 at 12.

<u>Analysis</u>

The issue is whether Claim 4 is broad enough to include non-patentable subject matter under 35 U.S.C. § 101. Given the arguments and evidence before the Court, the Court is unable to decide whether Claim 4 is directed to non-patentable subject matter. Specifically, the Court understands the crux of the issue to be whether "software for installation" is necessarily directed to a non-transitory tangible medium. Defendant contends that "for installation" does not inherently require a non-transitory tangible medium, but does not provide any evidence that allows the Court to reach that conclusion. Plaintiff contends that "for installation" does inherently require a non-transitory tangible medium, but similarly does not provide any evidence that allows the Court to reach that conclusion.

While software is not necessarily barred by § 101, it must be claimed as either a process or in some tangible form. Recently, in *Allvoice*, the Federal Circuit held that a claim to an "interface"—software—is not patentable under § 101 because it is not directed to a process or a tangible medium. *Allvoice*, 612 F. App'x at 1017–19. Specifically, the Federal Circuit explained: "Software may be patent eligible, but when a claim is not directed towards a process, the subject matter must exist in tangible form. Here, the disputed claims merely claim software instructions without any hardware limitations." *Id*. at 1018.

Software, and other computer-utilized data, is not necessarily embodied in a tangible form. In *Allvoice*, the Federal Circuit rejected the argument that software is necessarily in a tangible form—a manufacture—as it must exist in a "machine readable, physical state." *Id*. In rejecting the argument, the Federal Circuit explained that "instructions, data, or information alone, absent a tangible medium, is not a manufacture." *Id*. (citing *Digitech Image Techs.,* 758 F.3d at 1349–50; *Nuijten*, 500 F.3d at 1356). Similarly, in *Digitech*, the Federal Circuit rejected the argument that a claim to a "profile"—data—is § 101 eligible because the data necessarily is located within an electronic/computer system. *Digitech* 758 F.3d at 1348–50. The Federal Circuit in *Digitech* noted that the claim did not tie the data to a tangible embodiment and explained that "[d]ata in its ethereal, nonphysical form is simply information that does not fall under any of the categories of eligible subject matter under section 101." *Id*. at 1350 (comparing the *Digitech* claims with the claims to transitory signals held invalid in *Nuijten*).

It is unclear whether the "for installation" limitation necessarily means that the claimed invention is embodied in a non-transitory tangible form. However, the Court notes this may be a reasonable argument if, as Plaintiff contends, it may not be feasible to "install" software without first storing it on a tangible medium.

The Court notes that the uncertainty as to whether software that is computer-readable is necessarily patent eligible drives this dispute. On one hand, the Patent Trial and Appeal Board ("PTAB"), applying the broadest reasonable construction, has held that a claim directed to a "machine-readable storage medium" includes unpatentable transitory media and is patent ineligible under § 101. *See Ex parte Mewherter*, 107 U.S.P.Q.2d (BNA) 1857, 1859–62 (P.T.A.B. 2013) (citing *Nuijten* for the proposition that "transitory embodiments are not directed to statutory subject matter"). On the other hand, this Court has held that a claim to a "computer-readable medium" does not necessarily include unpatentable transitory embodiments. *See Data Engine Techs. LLC v. IBM*, No. 6:13-CV-860-RWS-JDL, 2015 U.S. Dist. LEXIS 68504, at *18–*22 (E.D. Tex. May 27, 2015) (noting that a transitory signal, while it may be computer readable according to the patent at issue there, it is not a "computer-readable medium containing instructions" as the claim required, because such a transitory signal cannot contain instructions). The Court does not understand *Mewherter* or *Data Engine* to conclusively establish whether a claim directed to a computer-readable medium necessarily includes unpatentable transitory signals. Even if a computer-readable medium necessarily includes transitory signals, it is not clear that a transitory signal can be said to be "for installation."

Accordingly, the Court finds that "computer software for installation on a client computer of a multi-tier virtual private network" should be accorded its plain and ordinary meaning and finds that Defendant has not shown, on this record, that it encompasses unpatentable subject matter.

E. The Order of the Steps of Method Claim 7

Disputed Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
"[I]ntercepting said function calls and requests for service sent by said applications program to said lower level set of communications drivers"	comprises a first group of steps that must precede all other steps.	comprises a first step that must precede all other steps
"[C]ausing an applications level authentication and encryption program in said one of said client computers to communicate with the server in response to receiving said intercepted function calls and requests for service by generating a session key, using the session key generated by the applications level authentication and encryption program to encrypt file [sic] send by the applications program"	comprises a second group of steps that must follow the first group of steps and precede the third group of steps	comprises a second group of steps that must follow the first step and precede the third step
"[S]ending function calls and requests for service to the lower level set of communications drivers in order to transmit said encrypted files over said open network"	comprises a third group of steps that must occur after all of the steps included in the first and second groups of steps	comprises a third step that must occur after all of the steps included in the first step and second group of steps

The Parties' Positions

Plaintiff submits that the Court has already construed Claim 7 as having groupings of steps, with the groupings proceeding in the order recited but with the steps within the groupings proceeding in any order. Dkt. No. 71 at 21–22 (citing *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364, 373–74 (E.D. Tex. 2011)). Plaintiff submits that the Defendant's proposed construction should be rejected because it ignores the groupings of the steps. *Id.* at 22–23. In particular, Plaintiff contends that "intercepting said function calls and requests for service" is not necessarily a single step, it could comprise a step of intercepting a function call and an additional step of intercepting a request for service. *Id.* at 23. And likewise, "sending function calls and

requests for service" is not necessarily a single step. *Id*. Plaintiff submits that the '011 Patent expressly contemplates intercepting function calls separately from requests for service. *Id*. (citing '011 Patent, at [57] Abstract, fig.7 step 100). And Plaintiff submits that the patent distinguishes functions and services by their type. *Id*. (citing '011 Patent col.3 ll.64 – col.4 l.1, col.6 ll.27–31, col.6 l.50, col.7 ll.53–64, col.9 ll.5–10, col.10 ll.21–22).

In addition to the claims themselves, Plaintiff cites the following **intrinsic evidence** to support its position: '011 Patent, at [57] Abstract, col.3 l.64 – col.4 l.1, col.6 ll.27–31, col.6 l.50, col.7 ll.53–64, col.9 ll.5–10, col.10 ll.21–22, fig.7.

Defendant responds that Claim 7 does not recite groups of "intercepting" steps or of "sending" steps, but rather recites a single intercepting step to intercept both function calls and requests for service, and a single sending step to send both function calls and requests for service. Dkt. No. 75 at 35–36. Defendant argues that the Court's construction in *Citrix* is based on Claim 27 of the '796 Patent and should not be applied to Claim 7 of the '011 Patent because Claim 27 of the '796 Patent includes two intercepting steps. *Id*. (citing *SSL Servs., LLC v. Citrix Sys.*, No. 2:08-cv-158, Dkt. No. 123 at 14–15 (E.D. Tex. Sept. 20, 2011); '796 Patent col.20 l.56 – col.22 l.5).

In addition to the claims themselves, Defendant cites the following **intrinsic evidence** to support its position: '796 Patent (Defendant's Ex. K, Dkt. No. 75-11).

Plaintiff replies that because the '011 Patent allows that function calls may be distinct from requests for service, the step of "intercepting function calls and requests for service" necessarily includes intercepting function calls distinct from intercepting requests for service. Dkt. No. 76 at 13. Thus, the patent contemplates that the "intercepting" and "sending" steps may comprise a group of steps. *Id*.

Analysis

The issue here distills to whether "intercepting/sending function calls and requests for service" can be understood as "intercepting/sending function calls and intercepting/sending requests for service." The Court understands that it can and therefore rejects Defendant's proposed construction. Neither Defendant nor Plaintiff objected to the Court's construction at the hearing.

The plain meaning of "intercepting/sending function calls and requests for service" is "intercepting/sending function calls and intercepting/sending requests for service." The Federal Circuit has addressed a similar grammar-based construction issue that informs the Court's analysis here. In *Superguide Corp. v. DirecTV Enters.*, the Federal Circuit determined that at as a matter of grammar, a phrase preceding a list applies to each member of a list. 358 F.3d 870, 886 (Fed. Cir. 2004) (citing William Strunk, Jr. & E. B. White, *The Elements of Style* 27 (4th ed. 2000)). For example, "in winter, summer, or fall" means "in winter, in summer, or in fall" and "at least one of A, B, C, and D" means at least one of A, at least one of B, at least one of C, and at least one of D. *See id*. The grammatical construct here is like "in winter and summer," which under the grammatical rule stated in *Superguide*, would mean "in winter and in summer." Under that rule, "intercepting function calls and requests for service" means "intercepting function calls and intercepting requests for service" and "sending function calls and requests for service" means "sending function calls and sending requests for service."

Defendant has not provided any reason why "function calls and requests for service" should be unitized in the subject phrases. And the Court declines to do so. That is, "function calls and requests for service" are not necessarily a unit, and the "intercepting" and "sending" steps of Claim 7 may include multiple intercepts or sends.

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Accordingly, the Court reiterates its reasoning and construction set forth in *Citrix*, and holds that Claim 7 includes three groups of steps, the "intercepting . . ." group, the "causing . . ." group, and the "sending . . ." group. These groups proceed in the order they are recited in Claim 7, but the steps within the groups may proceed in any order. *SSL Servs., LLC v. Citrix Sys.*, 816 F. Supp. 2d 364, 373–74 (E.D. Tex. 2011).

V.   CONCLUSION

The Court adopts the above constructions set forth in this opinion for the disputed and agreed terms of the '011 Patent. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court. However, the parties are reminded that all evidence must be constrained by the Court's reasoning in this Order.

SIGNED this 17th day of May, 2016.

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ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE